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METHODS OF ADMINISTERING IODINE FOR PROPHYLAXIS OF ENDEMIC GOITER.

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GENERAL CONSIDERATIONS.

Since it has been demonstrated that a deficiency of iodine is the principal, if not the sole, cause of endemic or simple goiter, there has been a steadily increasing interest on the part of public health authorities, physicians, and the laity in the practical application of this knowledge.

That numerous methods have been devised for supplying the iodine deficiency indicates both the interest in the subject and the difficulty accompanying prophylaxis on an extensive scale. The present article has been prepared for the purpose of outlining the prevailing methods of iodine administration, the merits and objections of each being pointed out incidentally.

It should be clearly understood that only prophylaxis is contemplated in the following exposition, the question of treatment being an entirely distinct subject, which had best be intrusted to the practicing physician. While iodine holds a definite place in thyroid therapy, its administration requires study and observation of individual patients as well as caution in application of the remedy, lest untoward results or permanent damage be inflicted. It should also be recalled that endemic or simple goiter, with which this article is concerned, is a condition differing radically from toxic goiter, otherwise known as hyperthyroidism. Moreover, the treatment for each is entirely different.

For the scientific basis of iodine prophylaxis the reader is referred to the plentiful literature dealing with that phase of the subject, noteworthy among which are the collected studies of Marine, Lenthart, Kimball, and Rogoff (1).

Any reference to the subject of endemic goiter would be incomplete unless it included the results of the painstaking and extended observations and experimentation of McCarrison in Gilgit, in Northern India (2). These authorities conclude that thyroid enlargement

is readily produced by the use of diets deficient in iodine. Conversely, iodine in minute doses will prevent and cure goiter, provided this element is administered at the proper time and season. Further lending support to the iodine deficiency theory, McCarrison holds that the prevention of endemic goiter is a matter of attention to the food and water supply and to individual and general hygienic conditions of life as well as to the varying needs of the body for iodine.

HISTORICAL REFERENCES TO THE USE OF IODINE.

That iodine exerted a definite influence upon the thyroid gland has been known for centuries. The early Greeks treated goiter by administering the ash of burned sea sponges, a substance rich in iodine. Beginning with the intentional administration of iodine by Coindet in 1820, this medicament experienced an extensive vogue in goiter therapy for a period of 75 years. In 1895, Baumann declared iodine to be a normal constituent of the thyroid gland, thereby opening up a fertile and profitable field for scientific research (3).

As a preventive of thyroid enlargement in man, iodine was first used by Marine and Kimball in 1917 in the schools of Akron, Ohio (4). Following this pioneer work, numerous methods of iodine prophylaxis were devised and applied by workers in various parts of the world. The principal methods employed will be set forth.

IODINE REQUIREMENTS OF THE THYROID GLAND.

According to Kimball (5), "the normal thyroid contains about 5 milligrams of iodine per gram of dried gland, 25 to 50 milligrams ($\frac{1}{4}$ of a grain) being the total storage capacity. Therefore, the administration of a few milligrams of iodine daily over a period of 30 or more days will supply the deficiency, which, in large part, is responsible for the enlargement of the thyroid. The gland will start to enlarge as soon as the iodine content falls below one-tenth of 1 per cent of the total amount of dried gland tissue."

METHODS AND FORMS OF ADMINISTRATION.

Iodine is readily taken up by the thyroid when administered by mouth, by inhalation, or by external application. Each of these methods has been used, and apparently with success. However, the usual and most popular method is that of administering some form of iodine by mouth.

Inhalation.—Weith (6), cited by Kimball (3), reports favorable therapeutic results following the inhalation of iodine secured by the suspension in the schoolroom of a wide-mouthed bottle containing 10 per cent tincture of iodine. This method, because of its obvious variability and difficulty of accurate dosage, has failed to become

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popular as a prophylactic measure. It is interesting, however, as an example of the widespread applicability of iodine prophylaxis.

That this method has its basis in scientific fact is shown by the experiments of Luckhardt, Koch, Schroeder, and Weiland (7). These observers found that iodine, when deposited on the skin in the form of fumes, was absorbed from the skin and appeared in the urine. The iodine content of the gland was greatly increased. When inhaled, the iodine fumes are absorbed by the respiratory tract, leading to death from pulmonary edema when excessive.

External application.—At the present time various iodine-containing liquids and ointments are used in the treatment of endemic goiters. Similarly, such ointments are used for prophylactic purposes. However, some method of administering iodine by mouth is likely to be more agreeable because of the ease of application and the accuracy with which dosage may be estimated.

Painting with iodine should be entirely discarded, according to Crotti (8). This form of iodine application blisters the skin and soon prevents the continuation of the treatment. It is a therapeutic measure which possesses no particular advantage and should be supplanted by one of the more readily applicable and efficacious methods.

Internal administration.—Beginning in 1917, when the first extensive goiter prophylaxis was instituted for the benefit of schoolgirls in Akron, Ohio, Marine and Kimball advocated the use of sodium iodide. In the principal writings of these investigators a uniform method of iodine administration has been followed. The various articles mentioned have been collected in a single volume, where they are available for ready reference (1).

Marine and Kimball have consistently maintained that "the most satisfactory method is the individual oral administration of some salt of iodine, either in solution or tablet form" (3). In the Akron schools 3-grain doses of sodium iodide were given in the drinking water once each day for two weeks each spring and fall (5). In Warren and Niles, Ohio, stock solutions of sodium iodide were provided in each school for the treatment of such goiters as were detected (3).

The disagreeable taste of sodium iodide has been responsible for considerable aversion and open objection to the prophylaxis. Therefore, efforts have been made to combine the drug in such a manner as to make it less objectionable. However, the combination of 1 grain of sodium iodide with sugar of milk did not prove successful in East Cleveland, Cleveland Heights, and Shaker Heights.

On the other hand, the iodine and chocolate tablet originated by the Swiss authorities has proved very popular. Instead of sodium iodide, an organic iodide which is nonhygroscopic, practically taste-

less, and very stable, a vegetable fatty acid compound, is combined with chocolate in tablet form. Each tablet contains between 5 and 10 milligrams of iodine. The preparation is pleasant to take, keeps indefinitely, and is being manufactured by American pharmaceutical houses under conditions which are approved by the Council on Pharmacy and Chemistry of the American Medical Association. One tablet is given each week throughout the school year to the children in need of the prophylaxis.

In 1918 a campaign to eradicate endemic goiter was begun in Zurich, Switzerland, under the direction of Klinger (9). The treatment employed consisted of the administration of a chocolate tablet containing the organic iodide as above described to each child once a week during the 40 weeks of the school year. The method has been employed in all of the schools of the Cantons of St. Gall, Berne, and Zurich for more than three years. The Goiter Commission of Switzerland has recently recommended that this method of goiter prevention be instituted as a public health measure throughout the entire country.

The sirups of hydriodic acid and ferrous iodide may be given in 1 cubic centimeter doses daily for 2 or 3 weeks twice a year with equally satisfactory results. More accurate dosage of these remedies may be arrived at by prescribing one drop per year of age. In some quarters the administration is advised daily during alternate months.

The case in behalf of individual oral administration has been stated recently by Kimball as follows: "From the point of view of thyroid function it makes no difference what preparation or method of administration is used so long as the thyroid gets iodine in amounts which it can store without excessive stimulation. But from a practical point of view, especially in carrying out the prophylaxis of goiter, the preparation used may make all the difference between success and failure."

Abandoning his former advocacy of sodium iodide, Kimball now recommends the chocolate-iodine combination as the most acceptable preparation for individual oral prophylaxis, because it is stable, pleasant to take, most practicable for administration to school children, and contains the proper amount of iodine, making it perfectly safe (10). In many places it is now the practice to have the school nurse give one tablet, containing 10 milligrams of iodine, once a week to each child in need of the prophylaxis.

However effective individual oral administration may appear, it is obvious that the method is both cumbersome and limited in widespread application. Therefore, modifications of the original Marine-Kimball method have been inevitable. Thus, it has occurred to Sloan (11), and also to Hirshfelder (13), that an iodized table salt will prove effective in goiter prophylaxis.

Iodized table salt.—Sloan calls attention to the fact that, next to water, common salt is the most universally used article of food. Most salt brines from which salt is crystallized contain a small amount of iodine, but, unfortunately, in the process of crystallization, iodine and other elements, such as bromine, remain in the mother liquor. Research by E. B. Forbes, of the Ohio Agricultural Station, disclosed the absence of iodine in any one of 12 varieties of salt manufactured in western New York, eastern Michigan, and Ohio. Hence, salt as it comes to the table can not be utilized for goiter prophylaxis without the artificial addition of iodine.

Sloan believes that the concentration of iodine in the proportion of 1:5000 is sufficient to produce results. Moreover, he advocates the use of iodine in cooking as well as the use of table salt, because many persons, particularly children, do not add salt to the food at the table. Sloan does not assume that iodized salt will cure even a simple goiter, especially one of appreciable size. In his opinion many goiters are due to the presence of infection, especially in the mouth and naso-pharynx. The removal of such foci of infection will, in Sloan's opinion, cause a rapid reduction of thyroid enlargement.

In commenting upon the desirability of using salt containing its natural chemical constituents, Hayhurst (12) expresses the belief that salt should contain sodium iodide and other compounds associated with sodium chloride in sea water. Salt for dietary purposes, he believes, should be prepared from sea water or from inland sources known to contain sodium iodide or other desirable compounds. Practically all the salt used in the United States is from inland sources which are, for the most part, inherently free from iodine.

The use of iodized salt for prophylaxis and occasionally for therapy is advocated by Hirschfelder. He gives specific directions for preparing the iodized salt, as follows: 50 cubic centimeters of a 10 per cent potassium iodide solution in 60 per cent alcohol is sprinkled or sprayed over 1 pound of ordinary salt. The resulting mixture is stirred, evaporated, ground, or crushed, forming the stock 1 per cent iodized salt. To prepare the salt for consumption, 5 pounds of common salt are spread in a thin layer and 5 teaspoonfuls of the stock preparation are sprinkled evenly from a salt shaker. This mixture may be used for all household purposes. For table use Hirschfelder recommends the addition of 2 tablespoonfuls of the stock mixture to 1 pound of ordinary salt.

Iodized salt holds forth considerable promise as a goiter prophylactic because of its wide and easy range of applicability. This fact has been recognized by Bayard of Zermatt, Switzerland, who first gave a mixture of common salt and iodine to five goitrous families daily for five months, each kilogram of salt containing

between 5 and 20 milligrams of iodine (14). Cattle were also given iodized salt. Later, Bayard extended his experiments to include 1,200 inhabitants of two villages, the iodization lasting six months. Each kilogram of salt used contained 0.004 gram of potassium iodide. In one of the villages the use of iodized salt was continued for another year, the percentage of iodine being increased to 0.01 gram for each kilogram of salt during the first half year and again increased to double that amount in the next half year. Excellent results are claimed as the result of this method of administering iodine. Goiters that had been refractory to the smaller percentages yielded when the iodine content was increased. No ill effects were noted from the prolonged use of the increased doses.

As a result of his research work, Bayard is convinced that the addition of 20 milligrams of potassium iodide (15 milligrams iodine) to each 5 kilograms of table salt, which is a year's consumption averaging 13.7 grams daily, is ample to prevent the development of goiter and to cause the regression of visible goiters in school children. In Bayard's experiments, 2, 4, 6, 8, and 10 centigrams of potassium iodide in each 5 kilograms of salt used by 5 different families failed to cause disagreeable consequences. Bayard urges the compulsory iodization of all salt to the extent of 0.5 milligrams of potassium iodide per kilogram of salt at first, gradually increasing the dosage to 2 milligrams per kilogram.

At a meeting of the Vienna Medical Society, Professor Wagner-Jauregg (15) strongly urged the constant use of salt containing 0.004 milligrams of iodine in each kilogram of salt in Styria, a well-defined goiter district in Austria. As salt is a State monopoly in Austria, its iodization would be a simple procedure and its effect would be exerted on all inhabitants. Wagner states that there is no danger of causing ill effects by the use of too large doses of iodine. Analyses of samples of salt from various sources show that larger quantities of iodine are present in some places than others. Thus, in Bordeaux, France, the salt contains three times the quantity of iodine contained in the Swiss experiments, no harm being discernible following its prolonged use. In Bex, salt rich in magnesium iodide is used, and goiter is rare.

Provided no ill effects are noted in Styria following the use of iodized salt over a period ranging between 5 and 10 years, Wagner urges the use of the same procedure for the entire Austrian population.

Iodized drinking water.—An ingenious method of supplying the iodine necessary to prevent endemic goiter is that recently inaugurated in Rochester, N. Y. (16). In that city it is planned to iodize the entire supply of drinking water twice each year for two weeks. The Water Bureau has already started this treatment of the water

from Hemlock Lake, which flows into Rush reservoir about 10 miles south of Rochester and has a normal iodine content of about 1 to 2 parts per billion. The amount of water entering the reservoir is determined at the gate house by means of a "thin edged weir," or dam. As the daily consumption of water in Rochester amounts to 25,000,000 gallons, it is estimated that the addition of 13.3 pounds of sodium iodide daily will be required to provide 1/75 of a grain of iodine to a gallon of that amount of water. With sodium iodide selling at \$4.80 a pound, the Rochester authorities estimate that \$1,785 a year will suffice to provide the requisite iodization during two 2-week periods.

The Rochester laboratory, checking the iodine content during the process, reported an increase from 1 to 20 parts of iodine per billion parts of water. Next fall it is planned to get about 50 parts of iodine to 1,000,000,000 parts of water during the semiannual iodization. Should the Rochester plan prove successful, and only a term of years can decide the matter, a revolutionary and widely applicable means of combating endemic goiter will apparently have become available. Rochester plans a resurvey next year to determine the influence of wholesale iodization of the public water supply.

In commenting upon the Rochester plan the Weekly Bulletin of the Chicago health department (17) estimates that the consumption of 2 quarts per day of the treated water during the two periods will provide sufficient iodine to prevent endemic goiter in accordance with the present Swiss standard, which is fixed at 1/150 of a grain of iodine. The Bulletin points out the enormous waste occasioned by the treatment of the entire water supply, and also shows that the success of the measure depends upon the daily consumption of at least 2 quarts of water by each individual. Such a condition is manifestly difficult to control from a public-health viewpoint.

POSSIBLE ILL EFFECTS OF IODINE PROPHYLAXIS.

Opinions among physicians as to the possibility of producing ill effects by iodine prophylaxis are by no means in full accord. Kimball (1) states that the possibility of harm from the iodine dosage recommended by him is absolutely negligible. Mild rash was encountered in but one per thousand of the cases treated in Akron. In all of the cases treated in Switzerland no case of iodism has been seen. Neither in this country nor Switzerland has a single case of exophthalmic goiter been produced.

Kimball further contends that a study of the iodine-exophthalmic case reports reveals the fact that the cases resulted from excessive, according to physiologic standards, amounts of iodine or desiccated thyroid gland. However, the possibility of aggravating a mild exophthalmic goiter, or even producing a syndrome in susceptible persons, must be considered.

Quite paradoxically it has been demonstrated by Plummer (18) "that many of the most outstanding and characteristic symptoms of exophthalmic goiter disappear rapidly and with a high degree of regularity following the administration of iodine." A marked drop in the basal metabolic rate, with coincident clinical improvement, is noted in patients with exophthalmic goiter following the administration of iodine in the form of Lugol's solution. These effects are usually noted after approximately 1 dram of Lugol's solution has been given orally in daily doses of 10 minimis.

On the other hand, the metabolic rate is likely to be increased with the administration of iodine or iodides in sufficient quantity to patients with adenomatous enlargement of the thyroid gland, a condition sometimes distinguishable with difficulty from the simple colloid or endemic goiter (19). This is undoubtedly due to the conversion of the adenomatous goiter *without* hyperthyroidism into the condition designated by Plummer as adenomatous goiter *with* hyperthyroidism.

Boothby (20) believes that adenomatous, as well as simple colloid, goiters, may be prevented by the proper administration of iodine. He warns, however, against attempts to reduce existing adenomatous enlargements, because such tissue may be excited to hyperfunction through iodine therapy.

A discordant note is sounded by de Quervain in his report to the Swiss Goiter Commission (21). He maintains that there have been no definite results following the addition of iodine to cooking salt and the inhalation of air containing iodine. Furthermore, de Quervain protests that iodine prophylaxis is too delicate a procedure to be carried out on such an extensive scale. The controlled sale of iodine and exclusion of all hypersusceptible persons from treatment are also advocated.

E. Bircher (22) has attacked the renewed agitation in favor of the use of iodine in goiter. The uncontrolled use, especially by the laity, is condemned. All patients, he maintains, should be under the constant care of physicians. In 1920, Bircher saw 36 cases of thyropathy, following the use of iodine, even in small doses. Furthermore, the physiology of the thyroid in normal and goitrous cases is so indefinite, the pharmacology of iodine so contradictory, and the experiences so different that it seems to Bircher a dangerous experiment to administer this effective poison to any great extent for a long period, either in food or otherwise. The results of iodine prophylaxis in the Swiss schools were not convincing to Bircher. Incidentally it may be mentioned that Bircher does not accept the iodine deficiency theory, having advanced and still holding other hypotheses of goiter causation.

Caution should be used in accepting the iodine deficiency theory without further evidence, according to de Courcy (23). This writer cites fatigue as the chief cause of goiter, especially at puberty and during pregnancy.

WHO SHOULD RECEIVE IODINE PROPHYLAXIS.

Endemic goiter is more frequent among girls than boys. Just how much more frequent the condition is in girls can not now be definitely stated, because succeeding surveys have greatly reduced the original estimate of 6 to 1 made by Marine and Kimball in Akron, Ohio. The recently completed examination of all school children in Grand Rapids, Mich., for instance, showed that only twice as many girls have thyroid enlargement (24). In some of the schools in Switzerland and occasionally in this country the sexes have been about equally affected. In Cincinnati, Ohio, the incidence of goiter among girls as compared with boys has been as 6 to 4 in several of the schools.

However, none of the ratios, unless explained accurately, represent the actual conditions. It is now known that the percentage of moderate and marked thyroid enlargement is much greater among girls than boys. Slight enlargements of the thyroid, on the other hand, are about equally distributed between the sexes. This frequency of slight enlargement in the male, therefore, aids in explaining the apparently heavy male incidence when endemic goiters are considered collectively.

In view of the findings it has been necessary to revise the original recommendations of Marine and Kimball that the prophylaxis be extended only to girls between the ages of 11 and 16, the period of adolescence. Inasmuch as thyroid enlargement is frequently found among children between the ages of 8 and 11, it is felt that the preventive measures should be applied earlier than has usually been the custom. Moreover, it is the writer's opinion that boys should receive the benefit of the measure as well as girls. Not only is thyroid enlargement prevented by this method, but existing goiters are frequently diminished in size. Nor is adolescence the only period during which the iodine prophylaxis proves efficacious. During pregnancy, iodine should be administered under the direction of the medical attendant, thereby preventing the development of goiter in the child as well as in the mother.

SUMMARY.

Summarizing, it may be stated that while numerous methods of supplying iodine for the prevention of endemic goiter have been suggested, the most favored one at the present time is the administration of a chocolate tablet containing 10 milligrams of iodine in the form

of an organic acid. One or two of these tablets, according to the age and requirements, should be given each week during the school year both to boys and girls between the ages of 11 and 16. Owing to the presence of thyroid enlargements in children less than 11 years of age, prophylaxis should profitably begin earlier than has ordinarily been recommended. The preventive should be used both in children in whom there is no evidence of thyroid enlargement and in those having such enlargement. In the latter instance, however, the exercise of nominal medical supervision is desirable.

The iodine-chocolate combination or other iodine-containing mixtures may be used advantageously during pregnancy, under the direction of a physician.

While individual oral administration of iodine is the method generally employed, the use of iodized table salt holds forth considerable promise as an efficient means of preventing endemic goiter in a wholesale manner. However, the difficulties of gauging accurately the dosage and of excluding from treatment the hypersusceptible are manifest handicaps to its uncontrolled application.

The wholesale iodoization of a municipal water supply may be cited as an ingenious method in need of further appraisal before a definite verdict as to its efficiency can be given.

According to the best information available there is little, if any, danger in iodine prophylaxis when it is carried out intelligently. Moreover, the rationale of the procedure is sufficiently sound and the results are sufficiently marked to make its extensive application both justifiable and advisable.

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ROCKY MOUNTAIN SPOTTED FEVER: VIABILITY OF THE VIRUS IN ANIMAL TISSUES.

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Ricketts¹ found that complete desiccation of the virus of Rocky Mountain spotted fever in blood would destroy pathogenicity in 24 to 48 hours, and that virus kept in the ice chest retained its infectiousness for 16 days, although the minimal infectious dose greatly increased.

Wolbach² found that complete desiccation destroyed the virus in blood in 10 to 15 hours. It withstood freezing longer than four days and less than nine days. He found the virus in testes, liver, spleen, and kidney infectious after it had been in 25 per cent and 50 per cent glycerin at 7° to 10° C. for five days, but it was destroyed after one month. Intermediate periods were not tested.

That the virus survives in the tissues of the fever tick (*Dermacentor andersoni*) through extremely cold weather may be inferred from the

¹ Ricketts, H. T.: Contributions to Med. Science, 1911. University of Chicago Press.

² Wolbach, S. B.: Studies in Rocky Mountain Spotted Fever. *Journ. Med. Res.*, 1919, 41: 1-197.

feeding habits and life cycle of the tick. Recently this has been demonstrated experimentally by keeping infected ticks outdoors through the winter in the Bitter Root Valley of Montana. In the spring of the following year, the presence of the virus in infective quantities was shown, either by incubating the ticks at 37° C. for 24 hours and then inoculating their contents intraperitoneally into guinea pigs,³ or by permitting the ticks to feed upon guinea pigs for two days. Inoculation with infected, unfed, wintered ticks without incubating or feeding has never proved infective, as shown in a previous paper.⁴

With this in mind, it was believed that the virus, under suitable conditions, would also survive in mammalian tissues. Therefore tissues were removed from guinea pigs at the height of typical spotted-fever symptoms and when showing no evidence of secondary infection. Such tissues were treated as shown in the accompanying tables, and tests for viability of the virus were made at intervals by emulsifying from one-half to 1 gram of tissue in 1 to 2 c. c. of salt solution and inoculating guinea pigs intraperitoneally.

Survival of spotted-fever virus in tissues of guinea pigs.

TABLE I.
[Guinea pig No. 6527. Tissue removed from guinea pig October 16, 1922.]

Test No.	Tissue.	Treatment of tissue.	Date of inoculation.	Result.
1....	Spleen and liver...	100 per cent glycerine kept at about -10° C.	Nov. 20, 1922	Typical spotted fever, with gangrene of testicles. Heart blood culture negative. Virus survived 35 days.
2....	do.....	.do.....	.do.....	Typical spotted fever. Heart blood transferred to three pigs, all of which developed spotted fever. Virus survived 35 days.
3....	do.....	.do.....	.do.....	Typical spotted fever. Virus survived 35 days.

TABLE II.
[Guinea pig No. 6520. Tissue removed from guinea pig Oct. 30, 1922.]

1....	Testicle.....	100 per cent glycerine and -10° C.	Dec. 30, 1922	Typical spotted fever. Virus survived 2 months.
2....	Spleen.....	.do.....	.do.....	Do.
3....	do.....	.do.....	.do.....	Do.

TABLE III.
[Guinea pig No. 7585. Tissue removed from guinea pig Nov. 16, 1922.]

1....	Spleen.....	Spleen chopped into small bits, chilled in CO ₂ snow, and placed in vacuum H ₂ SO ₄ at -10° C.	Jan. 16, 1923 ^a	Typical spotted fever. Virus survived 2 months.
2....	do.....	.do.....	.do.....	Do.
3....	Liver.....	.do.....	.do.....	Do.
4....	do.....	.do.....	.do.....	Do.

^a Experiments to be published.

^b Rocky Mountain spotted fever: Infectivity of fasting and recently fed ticks. Pub. Health Rep., vol. 38, No. 2, Feb. 23, 1923, pp. 333-339. (Reprint No. 817.)

^c Vacuum good on removal.

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Survival of spotted-fever virus in tissues of guinea pigs—Continued.

TABLE IV.

[Guinea pig No. 6374. Tissue removed from guinea pig Jan. 2, 1923.]

Test No.	Tissue.	Treatment of tissue.	Date of inoculation.	Result.
1....	Testicle.....	100 per cent glycerine kept at about -10° C.	Nov. 14, 1923	Typical spotted fever. Virus survived 10 months and 12 days.
2....	Spleen.....	do.....	do.....	Negative—spotted fever following injection of fresh virus.

TABLE V.

[Guinea pig No. 6131. Tissue removed from guinea pig Jan. 4, 1923.]

1....	Testicle.....	100 per cent glycerine kept at about -10° C.	Nov. 14, 1923	Typical spotted fever. Heart blood culture sterile 48 hours on agar slant and anaerobic meat media. Survival of virus 10 months and 10 days.
2....	Spleen.....	do.....	do.....	Negative—spotted fever following injection of fresh virus.

TABLE VI.

[Guinea pig No. 7117. Tissue removed from guinea pig Jan. 12, 1923.]

1....	Testicle.....	100 per cent glycerine kept at about -10° C.	Nov. 3, 1923	Typical spotted fever. Survival over 9 months.
2....	Liver.....	do.....	do.....	Negative. Dead on eighth day from secondary infection.

The above tables indicate that—

1. The virus of Rocky Mountain spotted fever survives in glycerine for more than 10 months when kept at -10° C.
2. The testicle is a more favorable tissue for the preservation of the virus in glycerine than is the spleen or liver. Brain tissue was not tested.
3. Tissue virus dried in vacuo survived two months when kept at -10° C.

No loss of virulence of the virus kept in glycerine was noted, since the eighth passage of the virus still showed full virulence for guinea pigs, producing typical lesions.

Rocky Mountain spotted fever may now be placed among the glycerine-resistant viruses, and a method by which the virus may be preserved for considerable periods has been developed.

DEATHS DURING WEEK ENDED DECEMBER 29, 1923.

Summary of information received by telegraph from industrial insurance companies for week ended December 29, 1923, and corresponding week of 1922. (From the Weekly Health Index, January 3, 1924, issued by the Bureau of the Census, Department of Commerce.)

	Week ended Dec. 29, 1923.	Corresponding week, 1922.
Policies in force.....	55,983,187	51,541,201
Number of death claims.....	9,032	11,409
Death claims per 1,000 policies in force, annual rate.....	8.4	11.5

Deaths from all causes in certain large cities of the United States during the week ended December 29, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, January 3, 1924, issued by the Bureau of the Census, Department of Commerce.)

City.	Week ended Dec. 29, 1923.		Annual death rate per 1,000, corre- sponding week, 1922.	Deaths under 1 year.		Infant mor- tality rate, week ended Dec. 29, 1921. ¹
	Total deaths.	Death rate. ²		Week ended Dec. 29, 1923.	Corre- sponding week, 1922.	
Total.....	7,040	12.5	14.2	818	995	.....
Akron, Ohio.....	32	8.0	11.0	5	9	59
Allany, N. Y. ³	41	18.2	15.7	3	2	66
Atlanta, Ga.....	76	17.8	20.4	9	12	.....
Baltimore, Md. ⁴	185	12.5	16.6	21	38	62
Birmingham, Ala.....	60	16.0	16.4	14	10	.....
Boston, Mass.....	210	14.2	17.1	24	29	69
Bridgeport, Conn.....	24	8.7	10.9	5	5	69
Buffalo, N. Y.....	122	11.9	12.8	19	26	80
Cambridge, Mass.....	24	11.2	19.3	4	7	71
Camden, N. J. ⁵	25	10.5	18.0	5	9	83
Chicago, Ill. ⁶	614	11.1	11.7	71	90	64
Cincinnati, Ohio.....	120	15.4	19.1	11	13	72
Cleveland, Ohio ⁷	148	8.7	12.5	18	31	49
Columbus, Ohio.....	69	13.8	17.7	7	13	73
Dallas, Tex.....	44	12.9	13.9	7	14	.....
Dayton, Ohio.....	33	10.4	13.5	6	4	99
Denver, Colo.....	76	14.6	13.1	9	2	.....
Des Moines, Iowa.....	40	14.8	.....	2	.....	.....
Detroit, Mich.....	241	12.6	12.2	48	39	95
Duluth, Minn.....	17	8.3	6.5	2	4	46
Erie, Pa.....	33	15.3	11.4	3	3	61
Fall River, Mass.....	28	12.1	13.0	6	9	85
Flint, Mich.....	19	8.4	13.1	2	3	40
Forth Worth, Tex.....	32	11.6	17.3	8	7	.....
Grand Rapids, Mich.....	25	8.9	14.5	2	7	32
Houston, Tex.....	39	13.1	12.5	7	8	.....
Indianapolis, Ind.....	113	17.2	13.9	13	11	100
Jacksonville, Fla.....	28	14.6	25.1	5	4	.....
Jersey City, N. J.....	71	12.0	14.3	10	11	67
Kansas City, Kans.....	32	14.4	9.2	4	2	92
Kansas City, Mo.....	80	11.9	17.6	14	10	.....
Los Angeles, Calif.....	260	20.3	15.3	25	25	91
Louisville, Ky.....	61	12.3	14.6	3	6	32
Lowell, Mass.....	27	12.2	14.6	3	3	52
Lynn, Mass.....	14	7.1	23.1	1	9	26
Memphis, Tenn.....	53	16.2	19.9	6	10	.....
Milwaukee, Wis.....	77	8.3	11.5	10	8	50
Minneapolis, Minn.....	98	12.5	12.4	13	17	71
Nashville, Tenn. ⁸	38	16.4	20.4	5	5	.....
New Bedford, Mass.....	15	6.0	16.8	6	9	94
New Haven, Conn.....	42	12.7	7.7	8	2	104
New Orleans, La.....	133	17.1	19.8	8	18	.....
New York, N. Y.....	1,313	11.5	13.0	151	155	60
Bronx Borough.....	152	9.4	11.5	9	15	32
Brooklyn Borough.....	455	11.0	13.0	57	67	60
Manhattan Borough.....	576	13.2	13.6	71	64	69
Queens Borough.....	84	8.2	9.9	10	5	54
Richmond Borough.....	46	18.8	23.9	4	4	73

¹ Annual rate per 1,000 population.² Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1922. Cities left blank are not in the registration area for births.³ Deaths for week ended Friday, Dec. 28, 1923.

Akro...
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¹ C...
² A...
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January 11, 1924.

Deaths from all causes in certain large cities of the United States during the week ended December 29, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, January 3, 1924, issued by the Bureau of the Census, Department of Commerce)—Continued.

City.	Week ended Dec. 29, 1923.		Annual death rate per 1,000, corresponding week, 1922,	Deaths under 1 year.		Infant mortality rate, week ended Dec. 29, 1923,
	Total deaths.	Death rate.		Week ended Dec. 29, 1923.	Corresponding week, 1922.	
Newark, N. J.....	84	10.0	13.8	11	14	52
Norfolk, Va.....	21	6.9	13.4	2	3	35
Oakland, Calif.....	48	10.4	13.9	33	7	39
Omaha, Nebr.....	45	11.5	15.3	5	8	54
Paterson, N. J.....	41	15.3	13.2	6	4	96
Philadelphia, Pa.....	473	12.8	16.2	50	77	65
Pittsburgh, Pa.....	180	15.3	18.3	32	30	111
Portland, Oreg.....	57	10.9	11.6	5	5	51
Providence, R. I.....	58	12.5	16.2	5	7	41
Richmond, Va.....	63	18.1	14.0	9	8	110
Rochester, N. Y.....	66	10.8	12.4	4	7	32
St. Louis, Mo.....	223	14.5	15.0	15	22	-----
St. Paul, Minn.....	45	9.7	15.7	6	5	55
Salt Lake City, Utah ³	30	12.4	12.2	7	4	114
San Antonio, Texas.....	38	10.7	18.4	3	15	-----
San Francisco, Calif.....	165	16.0	12.4	5	9	30
Seattle, Wash.....	61	10.1	9.1	1	9	9
Spokane, Wash.....	19	9.5	12.0	1	2	22
Springfield, Mass.....	33	11.9	13.4	3	7	43
Syracuse, N. Y.....	43	12.2	13.8	6	4	78
Tacoma, Wash.....	21	10.8	10.4	1	4	25
Toledo, Ohio.....	71	13.8	13.6	11	10	111
Trenton, N. J.....	45	18.4	21.3	7	7	119
Utica, N. Y.....	28	14.1	-----	0	-----	0
Washington, D. C.....	142	16.9	17.0	8	16	46
Wilmington, Del.....	33	14.6	16.2	2	0	41
Worcester, Mass.....	55	11.9	15.2	4	10	46
Yonkers, N. Y.....	20	9.7	10.9	3	2	65

³ Deaths for week ended Friday, Dec. 28, 1923.

MORTALITY SUMMARY FOR 70 LARGE CITIES, 1923.

Deaths from all causes, death rate, and infant mortality in 70 large cities of the United States for 1923 and comparison with 1922.

[From the Weekly Health Index, Bureau of the Census, Department of Commerce.]

City. ¹	Total deaths.	Death rate. ²	Deaths under 1 year.	Provisional infant mortality rate, 1923. ^{2,3}	Infant mortality rate, 1922.	Mortality data for calendar year 1922.		
						Total deaths.	Death rate.	Deaths under 1 year.
Total.....	377,852	13.0	49,106	4.75	4.80	359,392	12.6	50,039
Akron ⁴	1,621	7.8	301	61	70	1,563	7.5	311
Albany ⁴	1,910	16.3	205	86	80	1,824	15.7	191
Atlanta ⁴	3,933	17.7	557	-----	-----	3,430	15.7	448
Baltimore.....	11,582	15.0	1,505	84	92	10,824	14.2	1,591
Birmingham ⁴	3,041	15.6	456	-----	-----	2,620	13.7	366
Boston.....	11,383	14.8	1,550	83	92	11,420	14.9	1,719
Bridgeport ⁴	1,625	11.4	262	79	64	1,590	11.1	220
Buffalo.....	7,057	13.2	1,069	87	103	7,081	13.4	1,247

¹ Cities appearing in the summary are those shown for the 52 weeks in the Weekly Health Index.

² Allowance has been made for the extra day, which must be added to the 52 weeks to give a period of 365 days.

³ Infant mortality rate is based upon deaths under 1 year as returned each week and estimated births, 1923.

⁴ Infant mortality rate for the 56 cities in the birth registration area, appearing in the summary.

⁵ Enumerated population, January 1, 1920.

⁶Cities with no infant mortality rate given are not in the registration area for births.

Deaths from all causes, death rate, and infant mortality in 70 large cities of the United States for 1923 and comparison with 1922—Continued.

City.	Total deaths.	Death rate.	Deaths under 1 year.	Provisional infant mortality rate, 1923.	Infant mortality rate, 1922.	Mortality data for calendar year 1922.		
						Total deaths.	Death rate.	Deaths under 1 year.
Cambridge.....	1,522	13.7	201	67	76	1,467	13.2	227
Camden.....	1,783	14.4	285	87	88	1,676	13.7	278
Chicago.....	33,712	11.7	4,937	87	84	31,715	11.2	4,854
Cincinnati.....	6,553	16.2	672	81	74	6,043	14.9	581
Cleveland.....	9,570	10.8	1,379	69	78	8,801	10.3	1,454
Columbus.....	3,968	15.2	330	70	84	3,366	13.2	423
Dallas ^a	2,175	12.0	355	.....	.....	2,174	12.6	349
Dayton.....	1,946	11.8	248	80	71	1,783	11.0	218
Denver ^a	3,961	14.6	464	.....	.....	4,293	16.0	425
Des Moines ^a	1,652	11.8	153	.....	.....	(7)	(7)	(7)
Detroit ^a	13,030	13.1	2,456	88	87	11,018	11.1	2,255
Duluth.....	995	9.4	124	51	74	992	9.5	165
Erie.....	1,338	11.9	164	65	67	1,196	10.9	164
Fall River.....	1,661	13.8	336	91	127	1,937	16.0	449
Flint.....	1,300	11.1	248	82	65	839	7.5	170
Fort Worth ^a	1,191	8.3	159	.....	.....	1,294	9.9	153
Grand Rapids.....	1,709	11.7	206	62	61	1,583	11.0	193
Houston ^a	1,794	11.6	254	.....	.....	2,038	13.6	264
Indianapolis.....	4,928	14.4	594	86	77	4,412	13.2	511
Jacksonville, Fla. ^a	1,702	17.1	200	.....	.....	1,513	15.5	174
Jersey City.....	3,846	12.5	552	77	86	3,632	11.9	628
Kansas City, Kans.....	1,652	14.3	211	81	90	1,493	13.1	219
Kansas City, Mo. ^a	5,024	14.3	641	.....	.....	5,006	14.6	638
Los Angeles.....	10,723	15.9	1,157	69	73	9,636	15.2	1,013
Louisville.....	4,125	16.1	567	105	76	3,617	14.1	379
Lowell.....	1,671	14.6	307	105	99	1,536	13.4	288
Lynn.....	1,188	11.6	145	71	73	1,195	11.8	151
Memphis ^a	3,351	19.8	399	.....	.....	2,985	17.8	341
Milwaukee.....	5,207	10.8	853	75	83	4,702	9.9	835
Minneapolis.....	4,489	11.0	506	52	54	4,333	10.8	513
Nashville ^a	2,272	18.6	252	.....	.....	2,000	16.6	263
New Bedford.....	1,589	12.2	348	104	104	1,566	12.3	348
New Haven.....	2,156	12.5	274	69	75	2,266	13.3	291
New Orleans ^a	7,129	17.7	761	.....	.....	6,683	16.7	809
New York.....	69,300	11.7	8,563	67	75	69,846	12.0	9,680
Bronx Borough.....	7,932	9.5	728	49	64	7,472	9.2	960
Brooklyn Borough.....	22,886	10.6	2,860	59	72	21,516	11.6	3,514
Manhattan Borough.....	31,234	13.8	4,204	79	80	30,626	13.5	4,253
Queens Borough.....	5,250	9.8	592	62	75	5,540	10.7	731
Richmond Borough.....	1,998	15.7	179	63	78	1,692	13.6	222
Newark, N. J.....	5,188	11.9	749	67	75	5,058	11.7	823
Norfolk.....	1,646	10.4	283	99	86	1,513	12.1	227
Oakland.....	2,593	10.8	249	60	64	2,628	11.3	257
Omaha.....	2,724	13.4	341	70	71	2,638	13.1	329
Paterson.....	1,831	13.2	208	65	75	1,764	12.7	240
Philadelphia.....	26,658	13.9	3,200	78	83	25,101	13.2	3,361
Pittsburgh.....	9,529	15.4	1,426	93	96	8,721	14.3	1,420
Portland, Oreg.....	3,006	11.0	251	50	56	3,183	11.8	291
Providence.....	3,579	14.8	536	84	75	3,328	13.8	473
Richmond.....	2,818	15.6	464	105	89	2,636	14.8	367
Rochester.....	3,521	11.1	422	64	78	3,691	11.8	506
St. Louis ^a	10,839	13.5	970	.....	.....	9,933	12.5	854
St. Paul.....	3,021	12.5	322	53	65	2,797	11.7	372
Salt Lake City.....	1,565	12.4	204	65	73	1,539	12.4	232
San Antonio ^a	2,792	15.2	505	.....	.....	2,744	15.4	584
San Francisco.....	7,276	13.5	499	58	56	7,462	14.1	485
Seattle ^a	3,006	9.5	252	47	50	3,045	9.6	262
Springfield, Mass.....	1,675	11.6	228	74	73	1,601	11.4	225
Syracuse.....	2,378	12.9	338	81	89	2,290	12.7	358
Tacoma.....	1,045	10.3	94	41	58	1,079	10.8	115
Toledo.....	3,375	12.6	409	75	74	3,062	11.7	374
Trenton.....	1,938	15.3	252	79	107	1,945	15.6	329
Utica.....	1,286	12.5	161	67	82	1,466	14.4	192
Washington, D. C. ^a	7,098	16.3	819	91	85	6,305	14.4	779
Wilmington, Del.....	1,576	13.4	229	95	100	1,393	12.1	247
Worcester.....	2,424	12.7	336	77	80	2,441	13.0	349
Yonkers.....	1,071	10.0	142	60	83	1,126	10.7	198

^a Enumerated population, January 1, 1920.^b Cities with no infant mortality rate given are not in the registration area for births.^c Not available.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CURRENT STATE SUMMARIES.

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

Reports for Week Ended January 5, 1924.

ALABAMA.		Cases.	CALIFORNIA—continued.		Cases.
Chicken pox.....		64	Measles.....		347
Diphtheria.....		15	Poliomyelitis:		
Influenza.....		62	Santa Clara.....		1
Malaria.....		13	Kern County.....		1
Measles.....		345	Scarlet fever.....		217
Mumps.....		20	Smallpox:		
Pneumonia.....		65	Long Beach.....		15
Scarlet fever.....		12	Los Angeles.....		70
Smallpox.....		7	Los Angeles County.....		38
Tuberculosis.....		36	Ontario.....		6
Typhoid fever.....		15	Scattering.....		14
Whooping cough.....		64	Typhoid fever.....		4
ARIZONA.			COLORADO.		
Chicken pox.....		6	(Exclusive of Denver.)		
Diphtheria.....		2	Chicken pox.....		36
Measles.....		39	Diphtheria.....		23
Mumps.....		3	Measles.....		221
Scarlet fever.....		5	Mumps.....		5
Typhoid fever.....		2	Pneumonia.....		12
ARKANSAS.			Scarlet fever.....		29
Chicken pox.....		26	Smallpox.....		1
Diphtheria.....		16	Tuberculosis.....		94
Influenza.....		120	Typhoid fever.....		5
Malaria.....		27	Whooping cough.....		2
Measles.....		92	CONNECTICUT.		
Mumps.....		6	Chicken pox.....		75
Pellagra.....		2	Conjunctivitis (infectious).....		4
Scarlet fever.....		15	Diphtheria.....		60
Smallpox.....		8	Influenza.....		4
Trachoma.....		1	Measles.....		251
Tuberculosis.....		11	Mumps.....		27
Typhoid fever.....		26	Pneumonia (lobar).....		35
Whooping cough.....		81	Scarlet fever.....		132
CALIFORNIA.			Septic sore throat.....		1
Diphtheria.....		268	Tuberculosis (all forms).....		28
Influenza.....		26	Typhoid fever.....		2
Lethargic encephalitis:			Whooping cough.....		56
Lodi.....		1	DELAWARE.		
Los Angeles.....		1	Chicken pox.....		16
Oakland.....		1	Diphtheria.....		5
San Francisco.....		1	Mumps.....		1

DELAWARE—continued.		INDIANA—continued.	
	Cases.		Cases.
Pneumonia.....	3	Scarlet fever:	
Scarlet fever.....	10	Allen County.....	10
Tuberculosis.....	3	Lake County.....	11
Whooping cough.....	7	St. Joseph County.....	16
FLORIDA.		Scattering.....	66
Diphtheria.....	10	Smallpox:	
Influenza.....	1	Delaware County.....	11
Malaria.....	1	Scattering.....	26
Pneumonia.....	3	Tuberculosis.....	18
Scarlet fever.....	2	Typhoid fever.....	10
Typhoid fever.....	6	Whooping cough.....	39
GEORGIA.		IOWA.	
Cerebrospinal meningitis.....	1	Diphtheria.....	62
Chicken pox.....	18	Scarlet fever.....	57
Diphtheria.....	17	Smallpox.....	8
German measles.....	13	Typhoid fever.....	8
Hookworm disease.....	2	KANSAS.	
Influenza.....	15	Chicken pox.....	130
Leprosy.....	1	Diphtheria.....	76
Malaria.....	4	German measles.....	2
Measles.....	168	Influenza.....	8
Mumps.....	11	Measles.....	339
Pneumonia.....	31	Mumps.....	87
Scarlet fever.....	8	Pneumonia.....	51
Smallpox.....	84	Poliomyelitis.....	2
Tuberculosis (pulmonary).....	7	Scarlet fever.....	99
Typhoid fever.....	1	Septic sore throat.....	1
Typhus fever.....	1	Smallpox.....	16
Whooping cough.....	4	Tuberculosis.....	59
ILLINOIS.		Typhoid fever.....	2
Diphtheria:		Whooping cough.....	60
Cook County.....	98	LOUISIANA.	
La Salle County.....	10	Diphtheria.....	29
Madison County.....	13	Hookworm disease.....	17
Scattering.....	73	Influenza.....	10
Influenza.....	16	Measles.....	120
Measles.....	499	Pneumonia.....	19
Pneumonia.....	296	Scarlet fever.....	11
Scarlet fever:		Smallpox.....	18
Cook County.....	106	Tuberculosis.....	20
Kane County.....	11	Typhoid fever.....	5
McLean County.....	12	MAINE.	
Macon County.....	10	Chicken pox.....	49
Scattering.....	87	Diphtheria.....	14
Smallpox.....	4	German measles.....	4
Tuberculosis.....	146	Influenza.....	1
Typhoid fever.....	52	Measles.....	98
Whooping cough.....	84	Mumps.....	49
INDIANA.		Pneumonia.....	19
Cerebrospinal meningitis—Ripley County.....	7	Scarlet fever.....	25
Chicken pox.....	74	Septic sore throat.....	2
Diphtheria:		Tuberculosis.....	6
Daviess County.....	9	Typhoid fever.....	1
Elkhart County.....	10	Vincent's angina.....	3
Madison County.....	12	Whooping cough.....	53
Miami County.....	12	MARYLAND. ¹	
Morgan County.....	10	Chicken pox.....	129
St Joseph County.....	16	Diphtheria.....	37
Scattering.....	74	German measles.....	4
Measles.....	306	Influenza.....	22
Pneumonia.....	9	Measles.....	102
Poliomyelitis—Lake County.....	1	Mumps.....	4

¹ Week ended Friday.

January 11, 1924.

MARYLAND—continued.

	Cases.
Ophthalmia neonatorum.....	1
Pneumonia (all forms).....	83
Scarlet fever.....	75
Septic sore throat.....	3
Tetanus.....	1
Tuberculosis.....	56
Typhoid fever.....	14
Whooping cough.....	46

MASSACHUSETTS.

Cerebrospinal meningitis.....	2
Chicken pox.....	310
Conjunctivitis (suppurative).....	6
Diphtheria.....	260
German measles.....	14
Influenza.....	9
Lethargic encephalitis.....	1
Malaria.....	1
Measles.....	355
Mumps.....	210
Ophthalmia neonatorum.....	13
Pneumonia (lobar).....	101
Poliomyelitis.....	4
Scarlet fever.....	392
Septic sore throat.....	1
Tuberculosis (all forms).....	111
Typhoid fever.....	3
Whooping cough.....	94

MICHIGAN.

Diphtheria.....	207
Measles.....	376
Pneumonia.....	84
Scarlet fever.....	301
Smallpox.....	85
Tuberculosis.....	34
Typhoid fever.....	7
Whooping cough.....	43

MINNESOTA.

Chicken pox.....	91
Diphtheria.....	96
Influenza.....	2
Measles.....	186
Pneumonia.....	3
Scarlet fever.....	227
Smallpox.....	52
Tuberculosis.....	52
Typhoid fever.....	3
Whooping cough.....	1

MISSISSIPPI.

Diphtheria.....	31
Scarlet fever.....	4
Smallpox.....	8
Typhoid fever.....	2

MISSOURI.

(Exclusive of Cape Girardeau.)	
Anthrax.....	1
Cerebrospinal meningitis.....	1
Chicken pox.....	87
Diphtheria.....	88

¹ Deaths.

MISSOURI—continued.

	Cases.
Influenza.....	15
Measles.....	507
Mumps.....	28
Ophthalmia neonatorum.....	1
Pneumonia.....	29
Scarlet fever.....	115
Smallpox.....	13
Tetanus.....	1
Trachoma.....	2
Tuberculosis.....	120
Typhoid fever.....	7
Whooping cough.....	93

MONTANA.

Diphtheria.....	11
Scarlet fever.....	23
Smallpox.....	39
Typhoid fever.....	3

NEW MEXICO.

Chicken pox.....	4
Diphtheria.....	22
Influenza.....	1
Malaria.....	1
Measles.....	13
Mumps.....	1
Pneumonia.....	2
Scarlet fever.....	5
Smallpox.....	1
Tuberculosis.....	24
Whooping cough.....	8

NEW YORK.

(Exclusive of New York City and including Buffalo figures for two weeks.)

Diphtheria.....	256
Influenza.....	27
Lethargic encephalitis.....	2
Measles.....	1,163
Pneumonia.....	303
Scarlet fever.....	402
Smallpox.....	30
Typhoid fever.....	28
Whooping cough.....	378

NORTH CAROLINA.

Cerebrospinal meningitis.....	1
Chicken pox.....	183
Diphtheria.....	67
German measles.....	8
Measles.....	1,273
Ophthalmia neonatorum.....	1
Scarlet fever.....	57
Septic sore throat.....	4
Smallpox.....	130
Typhoid fever.....	9
Whooping cough.....	272

OREGON.

Chicken pox.....	19
Diphtheria:	
Portland.....	22
Scattering.....	22
Measles.....	446
Pneumonia.....	18

OREGON—continued.		WASHINGTON—continued.	
	Cases.		Cases.
Scarlet fever.....	19	Measles.....	1,574
Smallpox.....	12	Mumps.....	10
Tuberculosis.....	10	Pneumonia.....	5
Typhoid fever.....	2	Scarlet fever:	
		Spokane.....	21
		Scattering.....	27
SOUTH DAKOTA.		Smallpox:	
Chicken pox.....	9	Cowlitz County.....	24
Diphtheria.....	18	Scattering.....	15
Measles.....	97	Tuberculosis.....	37
Mumps.....	10	Typhoid fever.....	1
Pneumonia.....	6	Whooping cough.....	8
Scarlet fever.....	62		
Smallpox.....	2	WEST VIRGINIA.	
Tuberculosis.....	4	Diphtheria.....	11
Typhoid fever.....	1	Scarlet fever.....	16
Whooping cough.....	9	Smallpox.....	1
TEXAS.		WISCONSIN.	
Chicken pox.....	40	Milwaukee:	
Dengue.....	4	Cerebrospinal meningitis.....	3
Diphtheria.....	50	Chicken pox.....	43
Influenza.....	23	Diphtheria.....	14
Measles.....	250	German measles.....	1
Mumps.....	4	Influenza.....	1
Fellagra.....	2	Measles.....	5
Pneumonia.....	24	Pneumonia.....	3
Scarlet fever.....	41	Scarlet fever.....	31
Smallpox.....	18	Smallpox.....	1
Trachoma.....	17	Tuberculosis.....	8
Tuberculosis.....	14	Typhoid fever.....	1
Typhoid fever.....	5	Whooping cough.....	27
Whooping cough.....	23	Scattering:	
		Cerebrospinal meningitis.....	1
VERMONT.		Chicken pox.....	161
Chicken pox.....	38	Diphtheria.....	71
Diphtheria.....	6	German measles.....	2
Measles.....	47	Influenza.....	31
Mumps.....	16	Measles.....	246
Scarlet fever.....	3	Pneumonia.....	21
Smallpox.....	4	Scarlet fever.....	255
Whooping cough.....	57	Smallpox.....	20
		Tuberculosis.....	7
VIRGINIA.		Typhoid fever.....	1
Cerebrospinal meningitis:		Whooping cough.....	129
Caroline County.....	1		
Henrico County.....	1	WYOMING.	
Spotsylvania County.....	1	Chicken pox.....	1
WASHINGTON.		Diphtheria.....	1
Chicken pox.....	39	Measles.....	124
Diphtheria.....	22	Pneumonia.....	2
Impetigo contagiosa.....	1	Scarlet fever.....	8

Reports for Week Ended December 29, 1923.

NORTH DAKOTA.		NORTH DAKOTA—continued.	
	Cases.		Cases.
Chicken pox.....	4	Typhoid fever.....	1
Diphtheria.....	32	Whooping cough.....	7
German measles.....	21		
Lethargic encephalitis.....	1	WYOMING.	
Measles.....	137	Chicken pox.....	8
Pneumonia.....	14	Diphtheria.....	1
Poliomyelitis.....	1	Influenza.....	2
Scarlet fever.....	74	Measles.....	46
Smallpox.....	4	Scarlet fever.....	8
Tuberculosis.....	2	Typhoid fever.....	1
		Whooping cough.....	7

January 11, 1924.

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week.

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
<i>October, 1923.</i>										
Ohio.....	5	1,464	8	3	300	.....	25	1,689	65	302
<i>November, 1923.</i>										
District of Columbia.....	2	77	3	.....	24	.....	4	101	25	12
New Mexico.....	.....	54	5	1	146	.....	36	36	.....	33
North Carolina.....	3	851	.....	.....	1,907	.....	3	445	228	61
South Carolina.....	.....	331	51	6	165	.....	1	26	220	10
<i>December, 1923.</i>										
Arizona.....	.....	26	.....	.....	72	.....	7	56	2	7
Connecticut.....	4	306	19	.....	883	.....	7	457	1	28

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923.**CEREBROSPINAL MENINGITIS.**

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for pre- vious years.	Week ended Dec. 22, 1923.		City.	Median for pre- vious years.	Week ended Dec. 22, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Michigan:			
San Francisco.....	0	1	.....	Detroit.....	0	2	.....
San Jose.....	0	.....	1	Flint.....	0	1	.....
Georgia:				Saginaw.....	0	.....	1
Atlanta.....	0	.....	1	Missouri:			
Illinois:				St. Louis.....	0	4	2
Chicago.....	1	2	2	New Jersey:			
Kansas:				Montclair.....	0	.....	1
Wichita.....	0	1	1	New York:			
Louisiana:				New York.....	3	1	2
New Orleans.....	0	1	.....	North Carolina:			
Maine:				Raleigh.....	0	1	.....
Lewiston.....	0	1	1	Pennsylvania:			
Massachusetts:				Philadelphia.....	0	2	.....
Boston.....	1	1	.....	Virginia:			
				Norfolk.....	0	.....	1

DIPHTHERIA.

See p. 72; also Current State summaries, p. 61, and Monthly summaries by States, above.

**CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued
INFLUENZA.**

City.	Cases.		Deaths, week ended Dec. 22, 1923.	City.	Cases.		Deaths, week ended Dec. 22, 1923.
	Week ended Dec. 23, 1922.	Week ended Dec. 22, 1923.			Week ended Dec. 23, 1922.	Week ended Dec. 22, 1923.	
Alabama:				Massachusetts—Contd.			
Anniston.....		6	1	Everett.....	4		
Birmingham.....	3	8		Fall River.....	1		
Montgomery.....	1	4		Haverhill.....	1		
Tuscaloosa.....		3		Lawrence.....	2		
Arkansas:				Leominster.....	2		
Little Rock.....	1	1		Lowell.....	1		
California:				Lynn.....		1	
Bakersfield.....				Malden.....	1		
Berkeley.....	3			Quincy.....	1		
Long Beach.....				Michigan:			
Los Angeles.....	4	22	3	Detroit.....	3	2	2
Oakland.....	2	5		Minnesota:			
Sacramento.....	3			St. Paul.....			1
San Francisco.....	4			Missouri:			
San Jose.....		1		Kansas City.....	2	2	
Santa Ana.....	4			St. Joseph.....	1		
Stockton.....			1	St. Louis.....	1	1	
Colorado:				Montana:			
Denver.....				Great Falls.....			1
Connecticut:				Missoula.....	1		
Bridgeport.....	3			New Jersey:			
District of Columbia:				Kearny.....	2		
Washington.....	2			Newark.....	16	12	
Florida:				Passaic.....	1	1	
Tampa.....	1			Trenton.....	1		
Georgia:				New York:			
Atlanta.....	85	4	3	Amsterdam.....	2		
Augusta.....	31			Buffalo.....	2		1
Brunswick.....	48			Cohoes.....			
Macon.....	35			Mount Vernon.....	1	1	1
Rome.....	16			New York.....	54	22	6
Savannah.....	23	4		Ohio:			
Illinois:				Akron.....	1		
Chicago.....	16	18	8	Cincinnati.....			1
Danville.....	1			Cleveland.....	1	7	
Decatur.....		1		Columbus.....			1
Jacksonville.....	1			Pennsylvania:			
Rockford.....			1	Philadelphia.....	5	4	2
Indiana:				South Carolina:			
Muncie.....			1	Charleston.....	29		1
Kentucky:				Tennessee:			
Louisville.....	2	1		Memphis.....			2
Louisiana:				Nashville.....			2
New Orleans.....		2	2	Texas:			
Maine:				Beaumont.....			1
Biddeford.....		1		Dallas.....	1		2
Maryland:				Virginia:			
Baltimore.....	27	15	1	Roanoke.....	10		
Massachusetts:				West Virginia:			
Beverly.....	1			Bluefield.....			1
Boston.....	8	5	2	Fairmont.....	1		
Cambridge.....	1	3		Wisconsin:			
Chelsea.....		1		Kenosha.....		1	
Danvers.....	4						

LETHARGIC ENCEPHALITIS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Illinois:			Missouri:		
Chicago.....	1	1	Kansas City.....		1
Galesburg.....	1		New York:		2
Maryland:			New York.....	1	
Baltimore.....	1		Ohio:		
Massachusetts:			Cleveland.....	2	
Boston.....		1	Wisconsin:		
Michigan:			Milwaukee.....		1
Detroit.....	2	1			

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.**MALARIA.**

City.	Cases.	Deaths.
Georgia: Augusta.....	3	.....

MEASLES.

See p. 72; also Current State summaries, p. 61, and Monthly summaries by States, p. 65.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama: Mobile.....	1	1	South Carolina: Charleston.....		3
California: Glendale.....		1	Columbia.....		1
Oakland.....	1	1	Tennessee: Memphis.....		1
Georgia: Atlanta.....		1	Texas: Waco.....		1
Massachusetts: Quincy.....	2	.....		

PNEUMONIA (ALL FORMS).

Alabama:			Illinois—Continued.		
Anniston.....	6	2	Freeport.....	3	1
Birmingham.....	18	7	Galesburg.....	3	2
Mobile.....		4	Jacksonville.....		1
Montgomery.....		3	Kewanee.....		2
Arkansas:			Oak Park.....	4	1
Little Rock.....	3	.....	Pekin.....	3	.....
California:			Quincy.....	2	1
Glendale.....		2	Rockford.....		2
Long Beach.....	3	2	Springfield.....		2
Los Angeles.....	28	17	Indiana:		
Oakland.....		5	Crawfordsville.....		1
Pasadena.....		2	Elwood.....		1
Riverside.....	1	.....	Hammond.....		1
Sacramento.....		3	Indianapolis.....		1
San Francisco.....	22	14	Kokomo.....		1
San Jose.....	6	1	Michigan City.....		1
Stockton.....		5	Muncie.....	1	.....
Colorado:			Terre Haute.....		4
Denver.....	14	.....	Iowa:		
Pueblo.....	1	.....	Burlington.....	2	.....
Connecticut:			Kansas:		
Bridgeport.....		1	Fort Scott.....		1
Bristol.....	3	1	Kansas City.....	8	.....
Hartford.....	3	.....	Parsons.....	1	.....
New Haven.....		5	Topeka.....	7	1
New London.....	1	.....	Wichita.....	3	.....
Stonington.....		1	Kentucky:		
Delaware:			Covington.....		1
Wilmington.....		5	Henderson.....	3	.....
Florida:			Lexington.....		2
Tampa.....		1	Louisville.....		13
Georgia:			Louisiana:		
Albany.....	3	.....	New Orleans.....		15
Atlanta.....	16	15	Shreveport.....		3
Augusta.....		6	Maine:		
Brunswick.....	1	.....	Biddeford.....	3	1
Macon.....	3	.....	Lewiston.....		2
Rome.....	1	.....	Portland.....		3
Savannah.....		5	Maryland:		
Illinois:			Baltimore.....	30	28
Alton.....		1	Cumberland.....		2
Aurora.....	1	.....	Massachusetts:		
Chicago.....	178	65	Amesbury.....		1
Decatur.....	9	3	Arlington.....		1
East St. Louis.....		3	Boston.....		31
Elgin.....	5	.....	Cambridge.....		5
Evanston.....	1	.....	Chelsea.....		1

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Massachusetts—Continued.					
Chicopee	2	1	New York—Continued.		
Everett	1		Buffalo	33	18
Fall River	1		Cohoes	4	
Framingham		1	Glens Falls		1
Haverhill	4	1	Hornell	2	
Lawrence	1		Hudson	3	
Leominster	1		Lackawanna	3	1
Lowell		3	Lockport	2	1
Lynn		4	Middletown	1	
Malden		4	Mount Vernon	5	2
Medford		1	New York	319	150
Methuen	1		Newburgh		3
New Bedford		4	Olean	1	
Newburyport		1	Poughkeepsie		1
Newton	3		Rochester	17	4
North Adams		1	Rome	4	
Peabody		1	Schenectady	1	
Pittsfield		1	Syracuse	14	9
Somerville	3		White Plains	2	1
Southbridge		1	North Carolina:		
Springfield	2		Durham		2
Taunton		2	Greensboro		4
Waltham		1	Salisbury		1
Woburn		1	Winston-Salem		6
Worcester		5	North Dakota:		
Michigan:			Fargo		1
Battle Creek	3		Ohio:		
Detroit	54	21	Ashtabula		2
Flint	4	2	Barberton	2	
Grand Rapids	4	2	Bellaire		2
Hamtramck		2	Canton		5
Holland	1		Chillicothe		
Jackson	3	2	Cincinnati	1	
Kalamazoo	11	5	Cleveland	32	16
Marquette	1		Columbus		4
Muskegon		1	Cuyahoga Falls	1	
Port Huron	1		Dayton	2	
Saginaw		3	East Cleveland	2	1
Minnesota:			Findlay		
Duluth	3		Lancaster		
Minneapolis		5	Lima		2
St. Paul		10	Lorain		1
Missouri:			Mansfield	1	
Kansas City	20	11	Newark		1
St. Joseph		4	Piqua		1
Montana:			Sandusky	2	1
Billings		2	Springfield		2
Nebraska:			Toledo		4
Lincoln		1	Youngstown		6
Omaha		10	Oklahoma:		
Nevada:			Oklahoma		4
Reno	3		Pennsylvania:		
New Hampshire:			Philadelphia	92	54
Keene		1	Pittsburgh		27
New Jersey:			Rhode Island:		
Atlantic City	1		Cranston	2	1
Bayonne	2		Cumberland	1	
Bloomfield	2	1	Pawtucket		1
Camden	7	5	Providence		5
Clifton	2	1	South Carolina:		
East Orange	1		Charleston		3
Elizabeth		1	Columbia		4
Garfield	2		Greenville		1
Hackensack		2	Tennessee:		
Hoboken		1	Memphis		12
Jersey City	3		Nashville		3
Kearny		1	Texas:		
Montclair		1	Beaumont		1
Morristown		1	Corpus Christi		1
Newark	68	14	Dallas		4
Orange		1	El Paso		7
Passaic	2	1	Fort Worth		2
Paterson	7		Houston		3
Plainfield	1		San Antonio		5
Trenton		3	Utah:		
West Orange	2		Salt Lake City		7
New York:			Virginia:		
Albany	8		Alexandria	1	
Amsterdam		1	Lynchburg		3
			Newport News		1

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Virginia—Continued.			West Virginia—Continued.		
Norfolk.....		4	Parkersburg.....		1
Petersburg.....		2	Wheeling.....		4
Portsmouth.....		2			
Richmond.....		9	Wisconsin:		
Roanoke.....	3	1	Ashland.....	1	
West Virginia:			Eau Claire.....	6	
Charleston.....		4	Kenosha.....	1	
Huntington.....		2	Milwaukee.....		7
Morgantown.....	1		Oshkosh.....		1
			Racine.....		1

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median" for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for pre- vious years.	Week ended Dec. 22, 1923.		City.	Median for pre- vious years.	Week ended Dec. 22, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Minnesota:			
Long Beach.....	0	1		Mankato.....	0	1	
Los Angeles.....	0	1		New York:	0	3	1
Oakland.....	0	1		White Plains.....	0	1	
Illinois:				Ohio:			
Rock Island.....	0	1		Cleveland.....	0	1	
Indiana:				West Virginia:			
Muncie.....	0	1	1	Fairmont.....	0	1	
Massachusetts:							
Boston.....	0	1					
Lowell.....	0	1					

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:			
Los Angeles.....	11	New Jersey:	
Pasadena.....	1	Plainfield.....	2
Kentucky:		Tennessee:	
Louisville.....	1	Memphis.....	2

SCARLET FEVER.

See p. 72; also Current State summaries, p. 61, and Monthly summaries by States, p. 65.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for pre- vious years.	Week ended Dec. 22, 1923.		City.	Median for pre- vious years.	Week ended Dec. 22, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Minnesota:			
Birmingham.....	0	2	.....	Duluth.....	0	5	.....
California:				Mankato.....	0	1	.....
Long Beach.....	0	11	.....	Minneapolis.....	12	4	.....
Los Angeles.....	1	52	.....	St. Paul.....	8	18	.....
Pasadena.....	0	4	.....	Virginia.....	0	1	.....
San Francisco.....	0	2	.....	New York:			
Santa Ana.....	0	1	.....	Albany.....	0	3	.....
Georgia:				Schenectady.....	0	1	.....
Atlanta.....	4	34	.....	North Carolina:			
Macon.....	0	1	.....	Greensboro.....	0	3	.....
Illinois:				Ohio:			
Chicago.....	1	1	.....	Dayton.....	0	1	.....
Indiana:				Hamilton.....	1	1	.....
Gary.....	0	2	.....	Steubenville.....	0	5	.....
Hammond.....	0	1	.....	Toledo.....	1	1	.....
Indianapolis.....	2	4	.....	Youngstown.....	0	15	.....
Michawaka.....	0	1	.....	Zanesville.....	0	13	.....
Muncie.....	2	17	.....	South Carolina:			
South Bend.....	0	1	.....	Charleston.....	0	3	.....
Clinton.....	0	7	.....	Columbia.....	0	1	.....
Council Bluffs.....	1	1	.....	Greenville.....	0	1	.....
Des Moines.....	1	1	.....	Tennessee:			
Kansas:				Knoxville.....	0	3	.....
Kansas City.....	2	2	.....	Texas:			
Kentucky:				Forth Worth.....	0	1	.....
Louisville.....	0	1	.....	Vermont:			
Louisiana:				Burlington.....	0	3	.....
Shreveport.....	3	.....		Washington:			
Massachusetts:				Spokane.....	26	22	.....
Adams.....	4	.....		Tacoma.....	1	4	.....
Michigan:				Wisconsin:			
Battle Creek.....	0	2	.....	Eau Claire.....	1	1	.....
Detroit.....	5	17	.....	Manitowoc.....	0	1	.....
Flint.....	1	1	.....	Milwaukee.....	4	3	.....
Grand Rapids.....	0	3	.....	Oshkosh.....	0	1	.....
Holland.....	0	4	.....	Racine.....	0	1	.....
Jackson.....	0	4	.....	Superior.....	0	9	.....

TETANUS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Indiana:			West Virginia:		
Kokomo.....		1	Huntington.....		1
Kansas:					
Kansas City.....	1	.....		

TUBERCULOSIS.

See p. 72; also Current State summaries, p. 61.

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.**TYPHOID FEVER.**

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for pre- vious years.	Week ended Dec. 22, 1923.		City.	Median for pre- vious years.	Week ended Dec. 22, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Missouri—Continued.			
Birmingham.	1	3	.....	Kansas City.....	0	1	.....
California:				St. Louis.....	2	2	1
Los Angeles.....	1	7	.....	New Jersey:			
Oakland...	0	1	.....	Bayonne.....	0	2	.....
Richmond...	0	1	.....	Jersey City.....	0	1	.....
San Bernardino.	0	.....	1	Newark.....	1	1	2
San Francisco.	1	5	.....	Trenton.....	1	2	.....
Colorado:				New York:			
Pueblo.	0	1	.....	Buffalo.....	2	1	1
Connecticut:				New York.....	9	7	4
Bristol.	0	1	.....	North Tonawanda.....	0	1	.....
Delaware:				Rome.....	0	1	.....
Wilmington.....	0	3	.....	Syracuse.....	0	.....	1
Florida:				Ohio:			
St. Petersburg.....	1	1	.....	Cambridge.....	0	1	.....
Georgia:				Newark.....	0	2	.....
Atlanta.....	0	.....	1	Sandusky.....	0	1	.....
Brunswick.....	0	2	.....	Toledo.....	0	1	.....
Illinois:				Oklahoma:			
Chicago.....	5	32	5	Oklahoma.....	0	1	.....
Galesburg.....	0	1	.....	Shawnee.....	0	1	.....
Oak Park.....	0	1	.....	Pennsylvania:			
Quincy.....	0	1	.....	Bethlehem.....	0	1	.....
Springfield.....	0	1	.....	Easton.....	0	1	.....
Kentucky:				Farrell.....	0	1	.....
Louisville.....	0	2	.....	Hazleton.....	0	1	.....
Maine:				Lancaster.....	0	1	.....
Biddeford.....	0	1	.....	Philadelphia.....	3	1	1
Sanford.....	0	1	.....	Reading.....	0	4	.....
Maryland:				Washington.....	0	4	.....
Baltimore.....	4	8	1	South Dakota:			
Massachusetts:				Sioux Falls.....	0	1	.....
Boston.....	1	4	.....	Texas:			
Brookline.....	0	1	.....	Dallas.....	0	6	.....
Everett.....	0	1	.....	El Paso.....	0	2	.....
Michigan:				Virginia:			
Ann Arbor.....	0	.....	1	Richmond.....	0	1	.....
Detroit.....	3	.....	2	Roanoke.....	0	.....	1
Flint.....	0	2	.....	Washington:			
Grand Rapids.....	0	2	.....	Bellingham.....	0	1	.....
Saginaw.....	0	2	.....	Everett.....	0	1	.....
Minnesota:				West Virginia:			
St. Paul.....	0	.....	1	Fairmont.....	0	1	.....
Missouri:				Wisconsin:			
Joplin.....	0	1	.....	Milwaukee.....	0	1	1

TYPHUS FEVER.

City.	Cases.	Deaths.
Georgia: Atlanta.....	1	.....

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Illinois—Continued.										
Jacksonville	15,713	13							1	1
Kewanee	16,026	3			1	1				
La Salle	13,050		1		2		2			
Mattoon	13,552						1			
Murphysboro	10,703	2			2		1			1
Oak Park	39,858	13			1	1				
Quincy	35,978	10			112					
Rock Island	35,177	3								
Rockford	65,651	13								1
Springfield	59,183	27	3	1			1			
Indiana:										
Crawfordsville	10,139	2				1	1			
East Chicago	35,967	6				3				
Elwood	10,790	2				25				
Evansville	85,264		2				2			
Frankfort	11,585	1	1		14					
Gary	55,378	18	4	2			10			
Hammond	36,004	10			1		6			
Huntington	14,090	5								
Indianapolis	314,194	67	9		1		5			5
Kokomo	30,067	9	2							
La Fayette	22,486	4	2		1		1			1
Logansport	21,626	7								
Michigan City	19,457	5								1
Mishawaka	15,195	6					1			1
Muncie	36,524	16	4		1		1			
Newcastle	14,458	3			1					
Richmond	26,765						2			
South Bend	70,983	11	17		3		13			1
Terre Haute	66,083	25	1	1	2		3			
Iowa:										
Burlington	24,057	5					1		2	
Cedar Rapids	45,566		1				4	1		
Clinton	24,151		8							
Council Bluffs	36,162	6	1	1	2		1			
Des Moines	126,468				8		10			
Dubuque	39,141		4		1					
Iowa City	11,267		1		1		3			
Marshalltown	15,731	0								
Muscatine	16,068	0								
Ottumwa	23,003		1				2			
Sioux City	71,227		8		22		1			
Kansas:										
Atchison	12,630		2		1					
Coffeyville	13,452	1								
Fort Scott	10,693	5	1		1					
Kansas City	101,177		7		14		5		10	1
Lawrence	12,456	2	1							
Leavenworth	16,912	4			21					
Parsons	16,028		7							
Topeka	50,022	7	2		6				2	
Wichita	72,217	17	11		5		1		3	1
Kentucky:										
Covington	57,121	18	1				5		1	1
Henderson	12,169	3					1			4
Lexington	41,534	17			1		1			1
Louisville	234,891	79	4		2		4		7	1
Owensboro	17,424		1				1			
Louisiana:										
New Orleans	387,219	135	26		16		18		18	15
Shreveport	43,874	25	1		38					5
Maine:										
Auburn	16,985	4								1
Bath	14,731	3					1			1
Biddeford	18,008	10			1				2	
Lewiston	31,791	9	4		2				2	
Portland	69,272	23	3		2			3		1
Sanford (town)	10,691	8					2			2
Waterville	13,351				10					
Maryland:										
Baltimore	733,826	212	31	1	26		47		24	11
Cumberland	29,837	12	2				1		1	
Frederick	11,066	5	1				1			

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts:										
Adams (town)	12,967	3								
Amesbury (town)	10,036	5								
Arlington (town)	18,665	4	3				4			
Attleboro	19,731	7								
Belmont (town)	10,749	4	1				3		1	
Beverly	22,561	8				2				
Boston	748,060	227	73	4	34		76	1	32	24
Brantree (town)	10,580	4					2			1
Brockton	66,254	17	11				8		1	
Brookline	37,748	11					4		1	1
Cambridge	109,694	31	7		5		20		7	2
Chelsea	43,184	10	3				2		1	
Chicopee	36,214	8	3							1
Clinton	12,979	1								
Danvers	11,108						1		1	
Dedham	10,792	1								
Everett	40,120	7	6				5		1	
Fall River	120,485	29	5				6		2	1
Framingham	17,033	4	1		1		2		1	
Gardner	16,971	3			2		1			
Greenfield	15,462	1			1		1			
Haverhill	53,884	9	4		1		3		2	
Lawrence	94,270	30	2		5					
Leominster	10,744	2					6			1
Lowell	112,759	18	1		1		3		2	2
Lynn	99,148	26	3		3		4		2	2
Malden	49,103	8	6		2		4		1	
Medford	39,638	11	6				14			2
Melrose	18,204	6					2			
Methuen	15,189	1	2							
New Bedford	121,217	34	4				1		3	3
Newburyport	15,618	5					1		1	
Newton	46,654	13	1	1	2		1			
North Adams	22,282	5								
Northampton	21,951	5			1					
Peabody	19,552	6					6			
Pittsfield	41,763	12	9		34		4			1
Plymouth	13,045	3								
Quincy	47,876	9	4	1	5		4		2	1
Salem	42,529	12			4		13		1	
Somerville	93,091	28	6	1	1		9		4	3
Southbridge	14,245	4	2							
Springfield	129,614	31	2		9		17		2	5
Taunton	37,137	11			2				2	
Wakefield	13,025						2			
Waltham	30,915		7	2			5			
Watertown	21,457	2	2		2		3		1	
Webster	13,258	3								
West Springfield	13,443	1								
Westfield	18,604	2								
Winchester	10,485	1					2			
Winthrop	15,455	1					2			
Woburn	16,574	4								
Worcester	179,754	49			3				8	1
Michigan:										
Ann Arbor	19,516	8	1		6		1			
Battle Creek	36,164	0	6				11			
Detroit	993,678	227	69	3	80		90		35	18
Flint	91,590	28	16	2	26		2		6	2
Grand Rapids	137,634	33	7		4		16			1
Hamtramck	48,615	10	3	1			2			1
Holland	12,183						4			
Ironwood	15,739	4	4				12			
Jackson	48,374	14	2				6			
Kalamazoo	48,487	21	13				1		1	
Marquette	12,718	1			2		1			
Muskegon	36,570	8	6		1		4			
Pontiac	34,273	13	3		2		15			1
Port Huron	25,944	5	1				2			
Saginaw	61,903	18			11		16			1
Sault Ste. Marie	12,096	2	1		47					

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
Ithaca.....	17,004	11	1				1	1		
Lackawanna.....	17,918	8	5		2					
Little Falls.....	13,029	5			1	1			1	1
Lockport.....	21,308	5			5		8			
Middletown.....	18,420				1		2			3
Mount Vernon.....	42,723	12			3					
New York.....	5,620,048	1,243	108	13	176	7	264	1	107	198
Newburgh.....	30,366	12					4		1	
Niagara Falls.....	50,760	12	3	1	2		3		1	
North Tonawanda.....	15,482	6	1				6			
Olean.....	20,506	5					2		1	
Ossining.....	10,739	1								
Peekskill.....	15,868	3					1			
Poughkeepsie.....	35,000	9					3		2	
Rochester.....	295,750	60	9				13		5	8
Rome.....	26,341	4	5		38		2			
Saratoga Springs.....	13,181	6	1		2					
Schenectady.....	88,723	30	10		80		12			2
Syracuse.....	171,717	57	21	1	50		33		6	
White Plains.....	21,031	6	1		5					
North Carolina:										
Durham.....	21,719	5	2		1				2	
Greensboro.....	43,525	17	2		1		1			
Raleigh.....	24,418	13	5		4			1		
Rocky Mount.....	12,742	4								
Salisbury.....	13,584	4							2	
Winston-Salem.....	48,395	25	2	1	67				3	3
North Dakota:										
Fargo.....	21,961	7		1						
Grand Forks.....	14,010						2			
Ohio:										
Ashtabula.....	22,082	6	4	1			1			
Barberton.....	18,811	3	2				3			
Bellaire.....	15,061	4	1				3			
Bucyrus.....	10,425	3	2	1			1		2	
Cambridge.....	13,104	3							2	
Canton.....	87,091	29	11	1	2		3			1
Chillicothe.....	15,831	4								
Cincinnati.....	401,247	125	18	1	21		11		12	13
Cleveland.....	196,841	174	44	6	24		40	1	42	21
Cleveland Heights.....	15,236						1			
Columbus.....	237,031	55	13	1			4		6	5
Dayton.....	152,559	41	8		2		13		3	
East Cleveland.....	27,292	6								
East Liverpool.....	21,411			1			3		1	
East Youngstown.....	11,237	1								
Findlay.....	17,021	7	1				5			
Fremont.....	12,468	3								
Hamilton.....	39,675	8								1
Kenmore.....	12,683				2				2	
Lancaster.....	14,706	8	1						1	1
Lima.....	41,326	15	1		4		1			1
Lorain.....	37,295		6				8		2	
Mansfield.....	27,824	7	1				1			
Martins Ferry.....	11,634	4					2		2	
New Philadelphia.....	10,718				8		4		1	
Newark.....	26,718	10					1			1
Niles.....	13,080	1	3		1					
Norwood.....	24,966	1	2				2			
Piqua.....	15,044	2								
Salem.....	10,305	3								1
Sandusky.....	22,897	3					1		1	
Springfield.....	60,840	18					12			1
Steubenville.....	28,508	10								
Toledo.....	243,164	69	20	3	6		23		3	9
Youngstown.....	132,358	35	8	1	2		10	1		
Zanesville.....	29,569	4					1			
Oklahoma:										
Oklahoma.....	91,265	25	5		1		2		3	1
Shawnee.....	15,348	4	1		1		2			
Tulsa.....	72,075			4			1			

* Pulmonary only.

January 11, 1924.

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.
DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Pennsylvania:										
Allentown.	73,502	5		2					1	
Altoona.	60,331	1		3						
Ambridge.	12,730	2					10			
Beaver Falls.	12,802	1		7						
Berwick.	12,181	1		1						
Bethlehem.	50,358	0					3			
Braddock.	20,879	3		2					1	
Bradford.	15,525			5						
Butler.	23,778	1								
Canonsburg.	10,632	1								
Carbondale.	18,640	1		9						
Carlisle.	10,916									
Carnegie.	11,516									
Charleroi.	11,516	3								
Chester.	58,030	4								
Coatesville.	14,515									
Connellsville.	13,804	2								
Donora.	14,131									
Dubois.	13,681									
Duquesne.	19,611	1								
Easton.	33,813	7								
Erie.	93,372	5		3			12		7	
Farrell.	15,583	3					2			
Harrisburg.	75,917									
Hazleton.	32,277	1					1			
Homestead.	20,452						2			
Jeannette.	10,627									
Johnstown.	67,327	5		2			4			
Lancaster.	53,150	2		1			5		2	
Lebanon.	24,643	12					8			
McKeesport.	46,781	1								
Monessen.	18,179									
Mount Carmel.	17,469	6								
New Castle.	44,038	1		3						
New Kensington.	11,587	2					2			
Norristown.	32,319	2		1						
North Braddock.	14,928									
Philadelphia.	1,823,779	477	86	2	30	2	42	1	79	37
Phoenixville.	10,484								1	
Pittsburgh.	588,343	143	39	6	16		53			11
Plymouth.	16,500		1				1		2	
Pottstown.	17,431						1			
Pottsville.	21,876								2	
Reading.	107,784	4		1			1			
Scranton.	137,783	2		7			2		4	
Sharon.	21,747		1				4			
Shenandoah.	24,726		2							
Sunbury.	15,721				3					
Swissvale.	10,08	2								
Uniontown.	15,662	4								
Warren.	14,272								1	
Washington.	21,480				55		2			
Wilkes-Barre.	73,833	5								
Wilkinsburg.	24,403	3		1						
Williamsport.	35,198				48		1			
Woodlawn.	12,495				1					
York.	47,512	1					2		1	
Rhode Island:										
Cranston.	29,407	4					3			
Cumberland (town).	10,077	2							2	2
Pawtucket.	64,248	20	4	2	2			1		2
Providence.	237,595	57	20		2		53			
South Carolina:										
Charleston.	67,957	45	1		21	1				1
Columbia.	37,524	25	1		104	1	2		1	1
Greenville.	23,127	3	1		2					
South Dakota:										
Sioux Falls.	25,202	7			82		3			
Tennessee:										
Knoxville.	77,818					9		1		3
Memphis.	162,351	65	11		12			3	8	5
Nashville.	118,342	45	3		5		3	1	6	1

CITY REPORTS FOR WEEK ENDED DECEMBER 22, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula-tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber-cu-losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Texas:										
Amarillo.	15,494	10					1			
Beaumont.	40,422	7					3			1
Corpus Christi.	10,522	4	3	1						
Dallas.	158,976	40	18	1	200		11	1	1	
El Paso.	77,560	30	4		4		5		7	5
Fort Worth.	106,482	27	2		9		4	1		1
Galveston.	44,255	12	1				2			
Houston.	138,276	41	4	2	2		3			6
San Antonio.	161,379	57	2	1						8
Waco.	38,500	5								1
Utah:										
Provo.	10,303	4	1							
Salt Lake City.	118,110	39	5		14		1		1	1
Vermont:										
Barre.	10,008	3			1		2			
Burlington.	22,779	2			1		3			
Virginia:										
Alexandria.	18,060	5	1	1			1			
Charlottesville.	10,688	1								
Danville.	21,539	6	2				1		1	
Lynchburg.	30,070	11	4		2				1	1
Newport News.	35,506	4			2					
Norfolk.	115,777	6			31		7		4	2
Petersburg.	31,012	6	3		1		1		2	1
Portsmouth.	54,387	13			5					3
Richmond.	171,667	57	2		6		3		3	6
Roanoke.	50,842	19	2		2		1		2	2
Washington:										
Bellingham.	25,585				6		1			
Everett.	27,644				1					
Seattle.	315,312	6			206		6			
Spokane.	104,437	7			328		41		28	
Tacoma.	96,965	4			12		5			
Vancouver.	12,637				5					
Walla Walla.	15,503		2							
Yakima.	18,539				105					
West Virginia:										
Bluefield.	15,282	6								
Charleston.	39,608	21			1				1	1
Clarksburg.	27,869	10	1				5	1	1	
Fairmont.	17,851						1			
Huntington.	50,177	18					2		4	
Morgantown.	12,127				1					
Parkersburg.	20,050	8					1			1
Wheeling.	56,208	22	1	1	2		8		4	1
Wisconsin:										
Appleton.	19,561	6	3		3		1			
Ashland.	11,334	1								
Beloit.	21,284	4	2				1			
Eau Claire.	20,906				5		3			
Fond du Lac.	23,427	3	1				8		2	
Green Bay.	31,017		3		1		5			
Janesville.	18,293	4	4		1		2			
Kenosha.	40,472	9	12				1		2	2
La Crosse.	30,421						5			
Madison.	38,378	4	4		1		4		1	
Manitowoc.	17,563	3	2				1		1	
Marinette.	13,610				9					
Milwaukee.	457,147	86	23	2	7		29	1	12	10
Oshkosh.	33,162	8			20		1		3	
Racine.	58,593	12	3				40			1
Sheboygan.	30,955	4	3	1			13	1	2	
Stevens Point.	11,371						11			
Superior.	39,671	11	1				2			
Waukesha.	12,558	3	1							
Wausau.	18,661				4		4			
West Allis.	13,745			1			1			

FOREIGN AND INSULAR.

BOLIVIA.

Communicable Diseases—La Paz—November, 1923.

Communicable diseases were reported at La Paz, Bolivia, during the month of November, 1923, as follows:

Disease.	Cases.	Deaths.	Disease.	Cases.	Deaths.
Cerebrospinal meningitis.....		4	Scarlet fever.....		5
Diphtheria.....		1	Smallpox.....	10	6
Influenza.....	22	1	Tuberculosis.....	35	8
Measles.....		1	Typhoid fever.....	2	
Poliomyelitis (infantile paralysis).....		1	Typhus fever.....	12	2

Population, 100,000, officially estimated.

Dysentery—Smallpox Prevalent in Vicinity.

During the period under report, 18 cases of dysentery with 12 deaths were reported at La Paz. Smallpox was stated to be prevalent in the vicinity of the city.

BRAZIL.

Disease Notification—Pernambuco.

Information received under date of November 21, 1923, shows that the Department of Health of Pernambuco, Brazil, under date of November 12, 1923, called the attention of physicians in local practice, and the general public, to the requirements of the law imposing rigorous penalties for failure to notify any of the diseases included in the following list:

Yellow fever.	Typhoid and paratyphoid.
Bubonic plague.	Leprosy.
Cholera.	Tuberculosis.
Smallpox.	Malaria
Diphtheria.	Scarlet fever and measles.
Puerperal fever.	Beriberi.
Ophthalmia.	Dysentery.

It was further required that epidemic cerebrospinal meningitis, lethargic encephalitis, and chicken pox be similarly notified.

CANARY ISLANDS.

Plague—San Juan de la Rambla.

Information dated December 11, 1923, shows the occurrence of a case of plague at San Juan de la Rambla, a village situated 52 kilometers from Teneriffe, Canary Islands.

CUBA.**Communicable Diseases—Habana.**

Communicable diseases have been notified at Habana as follows:

Disease.	Dec. 11-20, 1923.		Remaining under treatment Dec. 20, 1923.
	New cases.	Deaths.	
Chicken pox.....	4	.....	2
Diphtheria.....	9	2	17
Leprosy.....	1	.....	15
Malaria.....	27	.....	230
Measles.....	2	.....	4
Typhoid fever.....	6	.....	26

¹ From the interior, 1.

² From the interior, 24; from abroad, 1.

³ From the interior, 1.

⁴ From the interior, 16.

ECUADOR.**Plague—Plague-Infected Rats—November 16-30, 1923.**

During the period November 16 to 30, 1923, four cases of plague with two deaths were notified at Guayaquil and the disease was reported present at Jipijapa (Manabi).

During the same period, out of 18,316 rats taken at Guayaquil, 37 rats were found plague infected.

GUADELOUPE (WEST INDIES).**Smallpox (Reported as Alastrim)—Leprosy.**

On November 8, 1923, smallpox (reported as alastrim) was stated to be decreasing in the Island of Guadeloupe and dependencies. Leprosy was stated to be present.

JAMAICA.**Smallpox (Reported as Alastrim).**

During the week ended December 8, 1923, 21 cases of smallpox (reported as alastrim) were notified in the Island of Jamaica.

Typhoid Fever—Kingston.

During the same period, 16 cases of typhoid fever were notified at Kingston.

LATVIA.**Communicable Diseases—October, 1923.**

Communicable diseases were notified in the Republic of Latvia during the month of October, 1923, as follows:

Diphtheria.....	50	Typhoid fever.....	106
Measles.....	14	Typhus fever.....	12
Scarlet fever.....	106	Typhus fever, recurrent.....	3
Smallpox.....	3	Whooping cough.....	22

¹ Paratyphus, case 7.

January 11, 1924.

Dysentery—Leprosy.

During the same period, 10 cases of dysentery and one case of leprosy were notified in the Republic of Latvia.

MEXICO.**Yellow Fever Work Discontinued—State of Vera Cruz.**

According to information dated November 26, 1923, the yellow fever work which was begun on February 1, 1921, under the direction of the International Health Board, was to be discontinued in the State of Vera Cruz, Mexico, from a date not later than November 30, 1923.

PERU.**Plague—November, 1923.**

During the month of November, 1923, 23 cases of plague with 18 deaths were reported in Peru. For distribution of occurrence according to locality, see page 83.

POLAND.**Communicable Diseases—October 7-20, 1923.**

During the period October 7 to 20, 1923, communicable diseases were reported as follows in Poland.

OCTOBER 7-13, 1923.

Disease.	Cases.	Deaths.	Districts showing greatest number of deaths.
Cerebrospinal meningitis.....	9	2	Lodz; Warsaw.
Diphtheria.....	77	1	Warsaw.
Measles.....	223	4	Kielce.
Scarlet fever.....	489	47	Lwow.
Smallpox.....	1	-----	Do.
Tuberculosis.....	64	162	Lodz.
Typhoid fever.....	424	28	Former Russian Poland.
Typhus fever.....	33	3	Galicia and former Russian Poland.
Whooping cough.....	39	4	-----

OCTOBER 14-20, 1923.

Cerebrospinal meningitis.....	5	4	Lodz.
Diphtheria.....	101	8	Volhynia.
Measles.....	210	16	Warsaw.
Scarlet fever.....	543	49	Lwow.
Smallpox.....	7	-----	Do.
Tuberculosis.....	60	162	Warsaw.
Typhoid fever.....	548	46	Lodz.
Typhus fever.....	19	4	Lublin.
Typhus fever, recurrent.....	8	-----	Galicia.
Whooping cough.....	56	7	-----

Dysentery—Malaria.

During the week ended October 13, 1923, 265 cases of dysentery with 59 deaths, with greatest mortality in the district of Krakow, were notified in Poland; and during the week ended October 20, 1923, 157 cases of dysentery with 32 deaths, with greatest mortality occurring in the district of Posen, and 28 cases of malaria, with one death occurring in the district of Lublin, were notified in Poland.

SIBERIA.**Plague-Infection Among Marmots—Dauria Station.**

Plague was reported present, October 21, 1923, at Dauria Station, Siberia, on the Chita Railway. Cases were stated to have been traced to traffic in marmot skins. Dauria Station was stated to be situated near the Manchuria frontier and to be a center of marmot hunting.

UNION OF SOUTH AFRICA.**Typhus Fever Outbreak—Durban.**

An outbreak of typhus fever was reported November 23, 1923, at Durban, State of Natal, Union of South Africa, with 47 cases under treatment on that date. The outbreak was stated to be confined to native (negro) stevedores in one barrack in the harbor area of the port. It was stated that the epidemic had been present since November 14. On November 24, 1923, 72 cases were reported present and confined to one compound.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended January 11, 1924.¹**CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
India— Rangoon.....	Nov. 11-17.....	1	1	Oct. 14-27, 1923: Cases, 1,569; deaths, 1,107.

PLAGUE.

British East Africa: Kenya— Mombasa.....	Oct. 14-20.....	1	1	Infected rats, 2.
Uganda.....	Aug. 1-Sept. 30...	218	211	
Canary Islands: San Juan de la Rambla.....	Dec. 11.....	1		Locality 52 km. from Teneriffe.
Ceylon: Colombo.....	Nov. 11-17.....	2		Plague rodents, 5.
Ecuador: Guayaquil.....	Nov. 16-30.....	4	2	Rats taken: 18,316; found infected, 37. Present.
Jipijapa.....	Nov. 16-30.....			
Egypt: City— Alexandria.....	Nov. 28-Dec. 2....	2	1	
India— Karachi.....	Nov. 18-24.....	9	11	Oct. 14-27, 1923: Cases, 3,705; deaths, 1,775.
Madras.....	do.....	203	139	Presidency.
Rangoon.....	Nov. 11-17.....	2	1	
Iraq: Bagdad.....	do.....	1		
Madagascar: Tananarive.....	Oct. 16-29.....		11	European, 2 cases, pneumonic.

¹ From medical officers of the Public Health Service, American consuls, and other sources. For reports received from June 30 to Dec. 28, 1923, see Public Health Reports for Dec. 28, 1923. The tables of epidemic diseases are terminated semiannually and new tables begun.

January 11, 1924.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**Reports Received During Week Ended January 11, 1924—Continued.****PLAQUE—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Locality—				
Canete.....	Nov. 1-30.....	1	1	
Chepen.....	do.....	1	1	
Chicalayo.....	do.....	15	12	
Lima (city).....	do.....	4	4	
Lima (country).....	do.....	1		
Lurin.....	do.....			
Siam:				
Bangkok.....	Nov. 4-10.....	1	1	
Siberia:				
Dauria Station.....				October 21, 1923: Present.

SMALLPOX.

Algeria:				
Algiers.....	Nov. 1-30.....	1		
Bolivia:				
La Paz.....	do.....	10	6	
Brazil:				
Rio de Janeiro.....	Nov. 18-24.....	3	1	
Sao Paulo.....	Sept. 3-9.....	1		
British East Africa:				
Tanganyika Territory.....	Sept. 30-Oct. 20.....	8	1	
Zanzibar.....	Sept. 1-30.....	85	3	In areas 27 miles from town of Zanzibar.
Canada:				
Manitoba—				
Winnipeg.....	Nov. 25-Dec. 15.....	16	3	
New Brunswick—				
Madawaska County.....	Dec. 8-15.....	1		
Ceylon:				
Colombo.....	Nov. 11-17.....	1		Port case.
Chile:				
Concepcion.....	Nov. 12-Dec. 3.....		5	
Talcahuano.....	Nov. 26-Dec. 2.....	3		
China:				
Amoy.....	Nov. 18-24.....			Present.
Chungking.....	Nov. 4-17.....			Present and endemic.
Manchuria—				
Harbin.....	Nov. 12-18.....	2		
Shanghai.....	Dec. 29.....			Prevalent.
Ecuador:				
Esmeraldas.....	Nov. 16-30.....	4		
Guadeloupe (West Indies):				
Basse Terre.....	Dec. 18.....			Present.
Marie Galante.....	do.....			Off shore island; present.
Pointe à Pitre.....	do.....			Present in vicinity.
India:				
Bombay.....	Nov. 4-10.....	9	3	Oct. 14-27, 1923: Cases, 1,247; deaths, 224.
Madras.....	Nov. 18-24.....	1		
Rangoon.....	Nov. 11-17.....	1		
Iraq:				
Bagdad.....		9	6	
Jamaica:				Dec. 2-8, 1923: Cases, 21.
Latvia:				Oct. 1-31, 1923: Cases, 3.
Poland:				Oct. 1-31, 1923: Cases, 8.
Portugal:				
Lisbon.....	Nov. 19-Dec. 8.....	7	6	
Oporto.....	Nov. 25-Dec. 8.....	12	6	
Siam:				
Bangkok.....	Oct. 28-Nov. 10.....	19	12	
Siberia:				
Dauria Station.....	Oct. 21.....			Present. Locality on Chita Railway, Manchurian frontier.
Spain:				
Barcelona.....	Nov. 15-21.....		1	
Valencia.....	Dec. 2-8.....	30		
Syria:				
Aleppo.....	Nov. 25-Dec. 1.....	1		In vicinity, at Djisr Chonghour.
Switzerland:				
Bernue.....	do.....	2		
Turkey:				
Constantinople.....	Nov. 11-17.....	2		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.
Reports Received During Week Ended January 11, 1924—Continued.
TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria: Algiers.....	Nov. 1-30.....	3	1	
Bolivia: La Paz.....	do.....	12	2	
Chile: Antofagasta.....	Dec. 2-8.....	4		
Talcahuano.....				Dec. 5, 1923: Three cases under treatment.
China: Antung.....	Nov. 12-18.....	1		
Egypt: Alexandria.....	Nov. 19-25.....	1		
Cairo.....	Sept. 10-23.....	2	3	
Latvia.....				Oct. 1-31, 1923: Cases, 12; paratyphus fever, 7; recurrent typhus, 3. Oct. 7-20, 1923: Cases, 52; deaths, 7.
Poland.....				
Turkey: Constantinople.....	Nov. 11-Dec. 1.....	10		
Union of South Africa: Natal— Durban.....	Nov. 24.....	72		Cases occurring among native stevedores in the harbor area of the port and confined to one barrack.
Transvaal— Johannesburg.....	Nov. 11-17.....	1		

Reports Received from December 29, 1923, to January 4, 1924.¹
CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India: Calcutta.....	Nov. 11-17.....	10	7	

PLAGUE.

Bolivia: La Paz.....	Oct. 1-31.....			
Brazil: Bahia.....	Nov. 11-17.....	1	1	
India: Bombay.....	Oct. 28-Nov. 3.....	1		
Karachi.....	Nov. 11-17.....	12	8	
Madras Presidency.....	Nov. 4-10.....	102	62	
Rangoon.....	do.....	3	2	
Syria: Beirut.....	Nov. 1-10.....	1		

SMALLPOX.

Bolivia: La Paz.....	Oct. 1-31.....	10	4	
Canada: Saskatchewan— Regina.....	Dec. 9-15.....	1		
China: Hongkong.....	Oct. 28-Nov. 3.....	47	43	
Colombia: Buenaventura.....	Nov. 18-Dec. 1.....	6		

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January 11, 1924.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.
Reports from December 29, 1923, to January 4, 1924—Continued.
SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Greece:				
Saloniki.....	Oct. 22-Nov. 4.....	.....	7	
India:				
Bombay.....	Oct. 28-Nov. 3.....	7	1	
Madras.....	Nov. 4-10.....	3	1	
Rangoon.....	do.....	3	1	
Iraq:				
Bagdad.....	Oct. 24-Nov. 6.....	5	2	
Jamaica.....	Nov. 23-Dec. 1.....	1	.....	Nov. 25-Dec. 1, 1923: Cases, 13 (reported as alastrim).
Java:				
West Java—				
Batavia.....	Oct. 27-Nov. 2.....	1	3	
Mexico:				
Vera Cruz.....	Nov. 3-9.....	.....	1	
Portugal:				
Lisbon.....	Nov. 11-Dec. 1.....	5	1	
Sierra Leone:				
Sherbro District—				
Tagbail.....	Nov. 1-15.....	3	.....
Spain:				
Valencia.....	Nov. 25-Dec. 1.....	32	4	
Syria:				
Damascus.....	Nov. 16-22.....	1	.....
Tunis:				
Tunis.....	Oct. 27-Nov. 2.....	5	1	
Union of South Africa:				
Cape Province.....	Oct. 28-Nov. 3.....	.....		Outbreaks.
Natal.....	do.....	.....		Do.
Orange Free State.....	do.....	.....		Do.

TYPHUS FEVER.

Bolivia:				
La Paz.....	Oct. 1-31.....	6	.....
Poland.....	.....	.....	.....	Sept. 23-Oct. 6, 1923: Cases, 81; deaths, 6.
Union of South Africa:				
Cape Province.....	Oct. 28-Nov. 3.....	.....		Outbreaks.
Natal.....	do.....		Do.
Transvaal.....	do.....		Do.

YELLOW FEVER.

Brazil:				
Pernambuco City.....	Nov. 16.....	3	2	

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